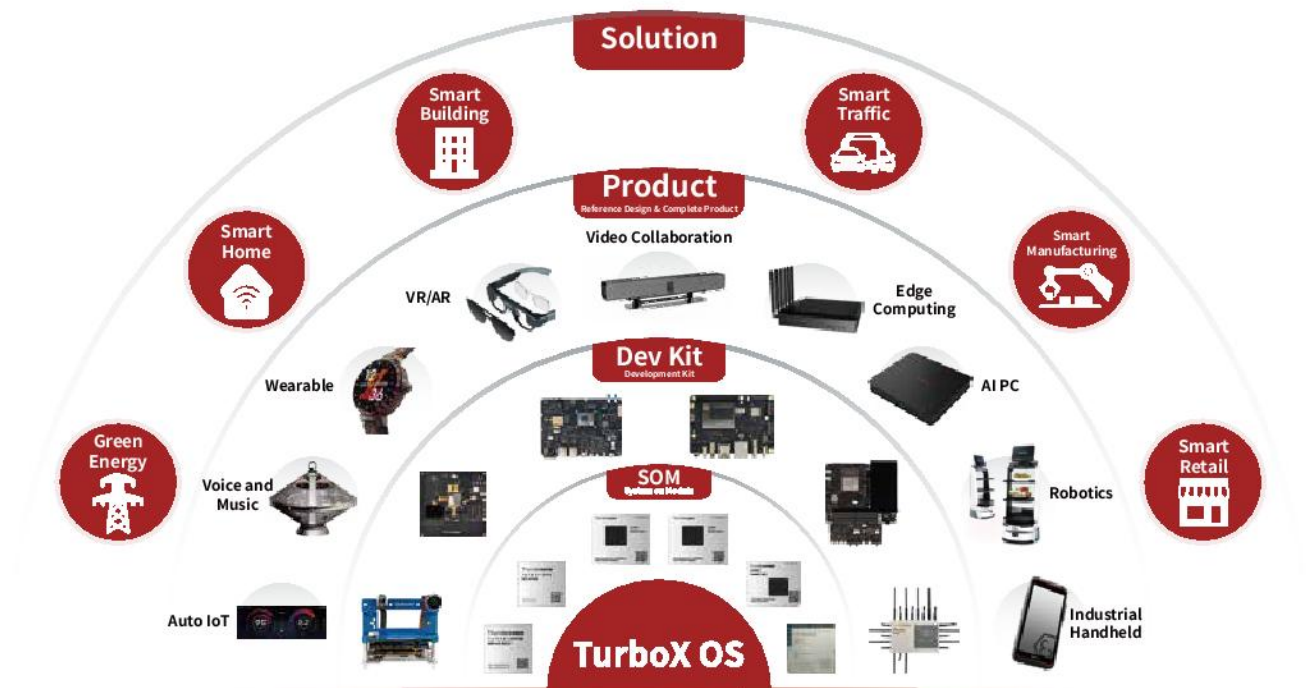# Thundercomm
One-stop IoT Solution Provider

Smart Devices Solutions

SOM • Dev Kit • Reference Design • Complete Product
Software Development • Cloud Service • On-device AI

Thundercomm

Thundercomm is a one-stop IoT solution provider for next-generation devices. Founded in 2016, Thundercomm is headquartered in San Diego and a joint venture with Qualcomm.

Solution: Smart Building, Smart Traffic, Smart Home, Smart Manufacturing, Green Energy, Smart Retail

Product — Reference Design & Complete Product: Video Collaboration, VR/AR, Edge Computing, Wearable, AI PC, Voice and Music, Robotics, Auto IoT, Industrial Handheld

Dev Kit — Development Kit

SOM — System on Module

TurboX OS

One-stop IoT Solution Provider

Leveraging Qualcomm's world-leading SoC technology and our proven expertise in operating systems, Thundercomm is now focused on combing emerging, disruptive technologies, like AI, 5G, IoT and cloud computing to provide comprehensive end-to-end solutions from smart modules, development kits, reference designs to complete product for OEMs/ODMs, enterprises and developers.

Customer Value

| Shorten Time to Market | Global Delivery | User Scenario Oriented | Effective Cost |

Based on optimized operating systems, embedded with mature AI algorithms and FOTA, Thundercomm empowers smart cameras, video conference devices, robotics, AR/VR glasses, wearables and industrial handhelds with small RAM, fastboot and low power features to lower the smart product development cost and speed up the product development process from prototype to mass production.

RUBIK Pi

RUBIK Pi 3, powered by Qualcomm® QCS6490, offers advanced on-device AI capabilities with various accessories. Ideal for Gen AI, small language models, whisper, computer vision and more, RUBIK Pi 3 is a compact, powerful platform that elevates your innovations with Qualcomm's cutting-edge technology.
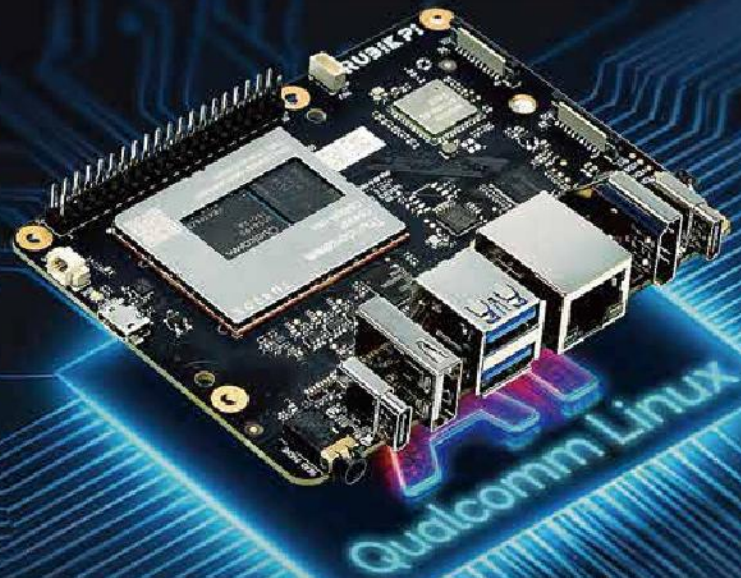
RUBIK Pi 3 Advantage

Qualcomm® Linux®
First open-source Linux based on Qualcomm® QCS6490 platform for developers

Compatibility
Compatible with Raspberry Pi 5 official accessories

Compact Design
With a portable size of 100mm x 75mm, enabling easy direct application in products

AI Capability
12.5 TOPS on-device AI capability

Easy to Expand
• C5430P/C6490P/C8550 SOMs are P2P compatible
• Easy to build customized EVK

Open-source Community
A vibrant and collaborative group of enthusiasts, developers, and educators

Multiple OS support
Qualcomm open-source Linux, Android, Ubuntu on Qualcomm IoT Platform

Comprehensive Documentation
Accessible documentation, including official guides, tutorials, datasheets, and FAQs

World Leading XR Solution Provider

· Optimized XR OS for better performance and lower power consumption

· Ultra high-resolution display with low rendering latency

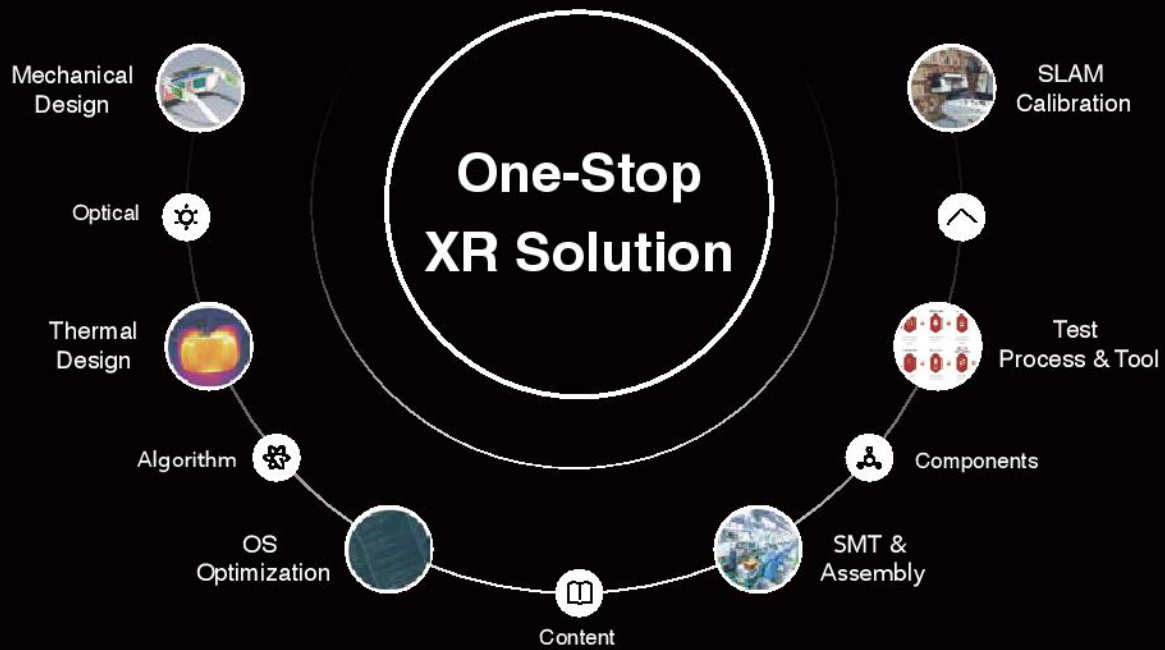· 6DoF head/controller and hand tracking for a more immersive experience

| VR | AR | MR |

One-Stop XR Solution

- Mechanical Design
- Optical
- Thermal Design
- Algorithm
- OS Optimization
- Content
- SMT & Assembly
- Components
- Test Process & Tool
- SLAM Calibration

Hardware Platform

MR HMD Pro

XR2 Gen2

Smart Glasses

AR1

MR HMD Pro

SoC	Qualcomm SXR2250P
Memory/Storage	16GB LPDDR5x, 512GB UFS3.1
Optical	Pancake with 90° FoV
Resolution	2 x 4K Display 3552*3840
6DoF	4*6DoF Camera
See Through	2*RGB Camera
Eye Tracking	Support
Hand Tracking	2*Hand Tracking Camera
Time of Flight	1*dToF Camera
IMU	Accelerometer, gyroscope, magnetometer
Key Feature	6DoF Head Tracking/Video See Through/Wireless Spilt Rendering/Hand Tracking/Eye Tracking

Smart Glasses

SoC	Qualcomm SAR1130P
Memory/Storage	4GB LPDDR4X, 32GB eMMC 5.1
RGB Camera	3024*4032, 1080P@30fps
BT/Wi-Fi	Wi-Fi 7, Bluetooth 5.3
Audio	5x digital microphone and stereo speaker
Resolution	640*480 Micro LED (Optional)
IMU	Accelerometer, gyroscope
Key Feature	Photo/Video/Music/Call/Voice CMD/Noise Cancellation/Voice Wake-up/AI Assistant

Contacts:
E-mail: sales@thundercomm.com

Video Collaboration Business

All-in-One Video Conference Device One-stop Solution Provider

All-in-One Teams room device	**360° panoramic camera**	**Bring your own device video bar**	**Touch console**	**Smart display**

Product design
From industrial design to device architecture, UI/UE and DFX

Hardware base
SOM, PCBA and mechanical custom

Software OS base
Android, Linux, customization and restructure

Image/Audio
Camera system and audio system design

UC platform
API integration and complete test & certification process

Intelligence
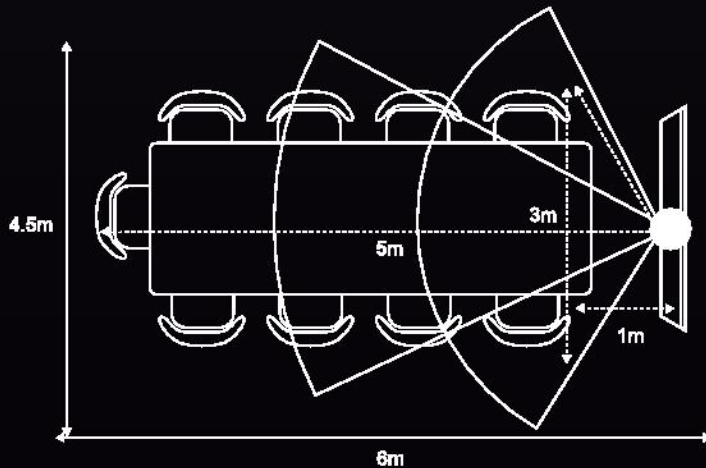Neural network AI algorithm
LLM on device

Cloud
FOTA, device management
Public/private cloud deployment

Key Technology

Camera system

· Multiple camera coordination
· ISP pipeline customization
· E-PTZ engine
· Camera fine tuning
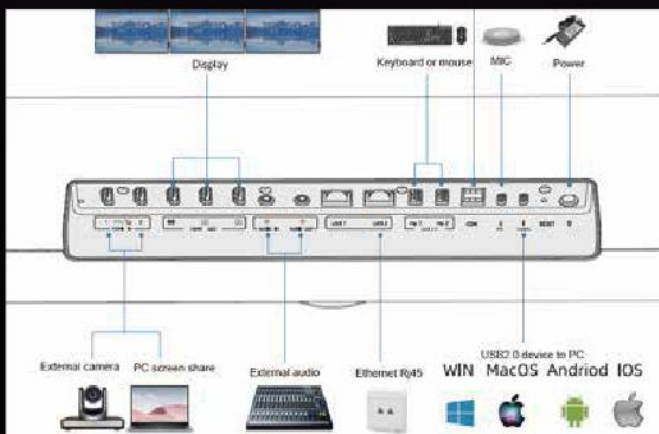· Intelligent people framing

Audio 3A system

· 14 MIC array for medium/large room
· 8 MIC array for small/medium room
· 4 MIC array for huddle room
· De-reverberation
· AI denoise

Key Design

Interface system

· Multiple HDMI out 4K60
· HDMI in 4K30
· DP in 4K30
· Audio extension
· Multiple-purpose USB-C
· GB Ethernet

Design for Microsoft Teams Room Android and Zoom

· Customized API for UC app
· Video/Audio in-out performance
· Robust system stability with 7*24 continuous operation
· Compatible with BYOD (Bring Your Own Device)
· Practical UE test
· 2D direction of arrival detection

One-stop Handheld Solution Provider

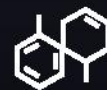| Industrial PDA	POS	Enterprise Tablet	Gaming Console

Industrial Handheld	5G + Wi-Fi 6E	Waterproof & Explosion-proof	ATEX
POS	PCI 6.x, EMV L1/L2	NFC EMVCo Certification	Printer Support
Enterprise Tablet	IP68 Resistant	Long Battery Life	Multi-task

Thundercomm

Distinctive Functions

Secure Payment

· Security and anti-tamper technology to erase data in the event of unauthorized attacks.

· Support barcode reader.

· Meet the latest PCI requirements, security standard PCI 6.x, EMV L1/L2.

Mastercard PayPass, Visa PayWave, American Express, JCB/Speedy, Diners/Discover D-PAS, Union Pay, FeliCa M Class, J-debit, etc.
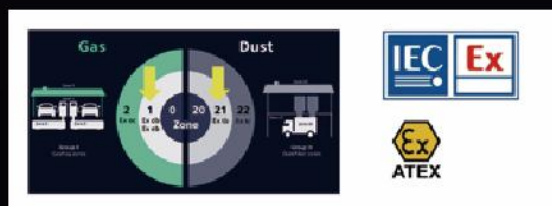
Waterproof Design (IP68)

· The devices are IP tested and certified, making them dust and water resistant.

Explosion-proof Design

· Meet the requirements: Gas Zone 1 & Dust Zone 21

· Ex ib IIC T4 Gb

Certified by ATEX/IECEx Zone 1/21 NEC500 Class 1 Div 1 EAC/INMETRO/KCs /PCEC

Software Customization Offering

Applications

Middleware

Handheld/POS	Game Console	Intelligence
Bar Code	Joystick Solution	Object Detection
Face ID	Wi-Fi 7 / 5G	People Counting
Anti Tamper	Performance Strategy	Patch Track
Payment	Gamekey Remap	Face Recognition

Android OS

FW/BSP customization	Fast Boot	Dual Battery

Hardware Platform

C2290 SOM	C6115 SOM	C6490P SOM	C6690 SOM	C8550 SOM

One-stop Robotics Solution Provider

SOM

Dev Kit & Reference Design

Robotic Solution

Hardware

OS

Perception solution

AI

Software
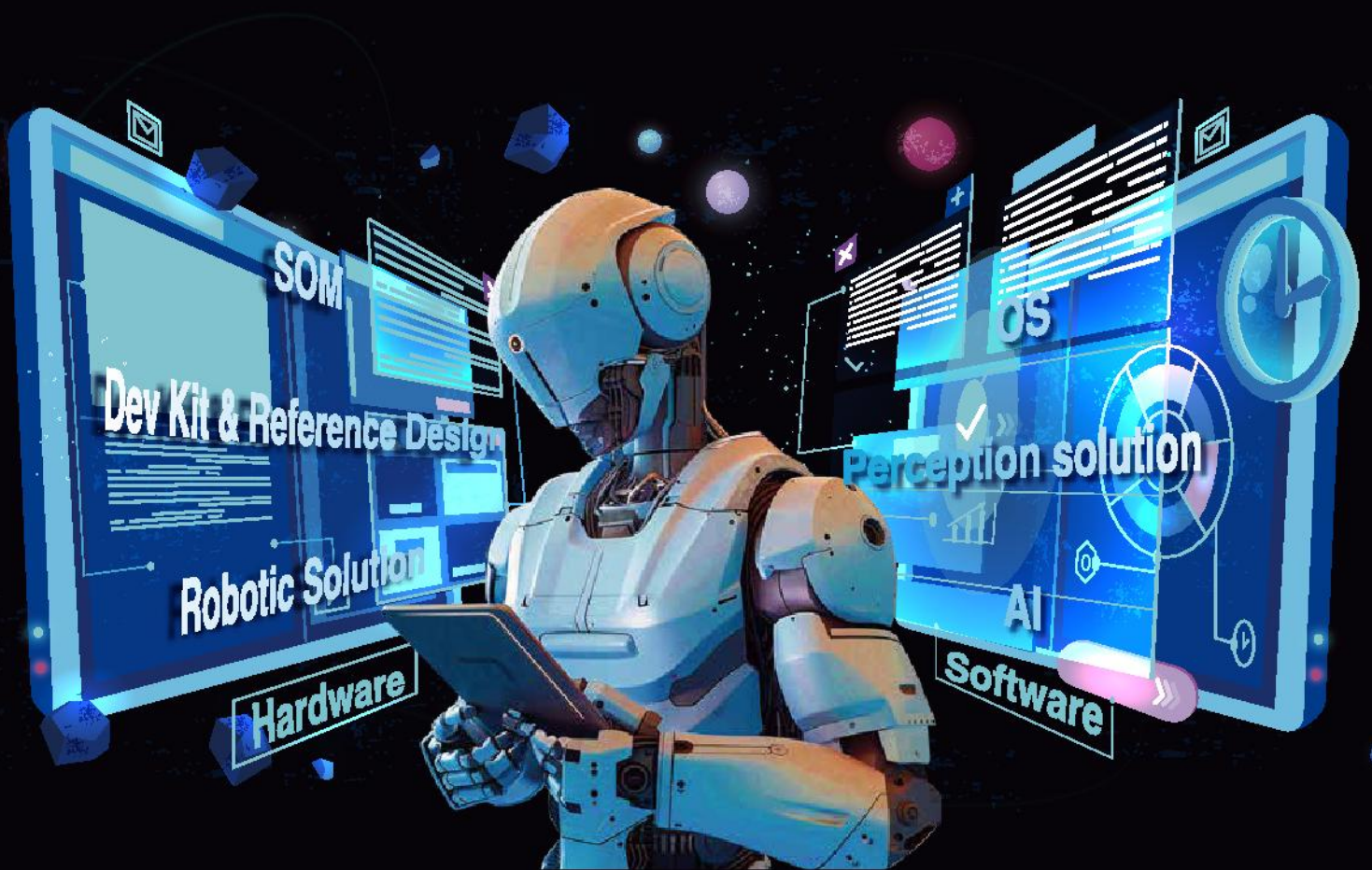
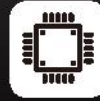| Drone | Service Robot | AMR | Companion Robot | Humanoid Robot |

Robotics Service

Consultant and Design Service
Innovative category prototype design. Support a variety of robots from home to sky.

Hardware Base
SOM, PCBA and structural customization.

Algorithm Optimization
Support SLAM, ML, CV, LLM, NAV algorithm customization.

Cloud and APP Design
FOTA, facility management, location management.

OS&APP
Android, Linux, ROS customization, fast startup, small memory optimization.

Encryption and Security
Safe read and write area design, image information desensitization processing.

Key Technology

Intelligent Perception Solution
· Camera pipeline customization & camera tuning
· 8-camera concurrent processing
· Multi-sensor fusion filtering
· High frame rate object detection and segmentation

Intelligent Interaction Solution
· ID design
· Voice localization
· Motion planning
· Local LLM optimization

User Scenario

Different types of robots are being integrated into our daily life. Thundercomm is helping people build all kinds of robots.

Drone | Public Safety Robot | Logistics Robot | Professional Cleaner | Lawn Mower | Controller | Home Robot | Robotic Smart Assistant

Contacts:
E-mail: sales@thundercomm.com

AI PC Full-Stack Solution Provider

· Over 10 years of close collaboration with Qualcomm and Microsoft

· Pioneer in developing WoS (Windows on Snapdragon) capabilities with extensive design and manufacturing experience

· Full-stack Windows system development team and capabilities

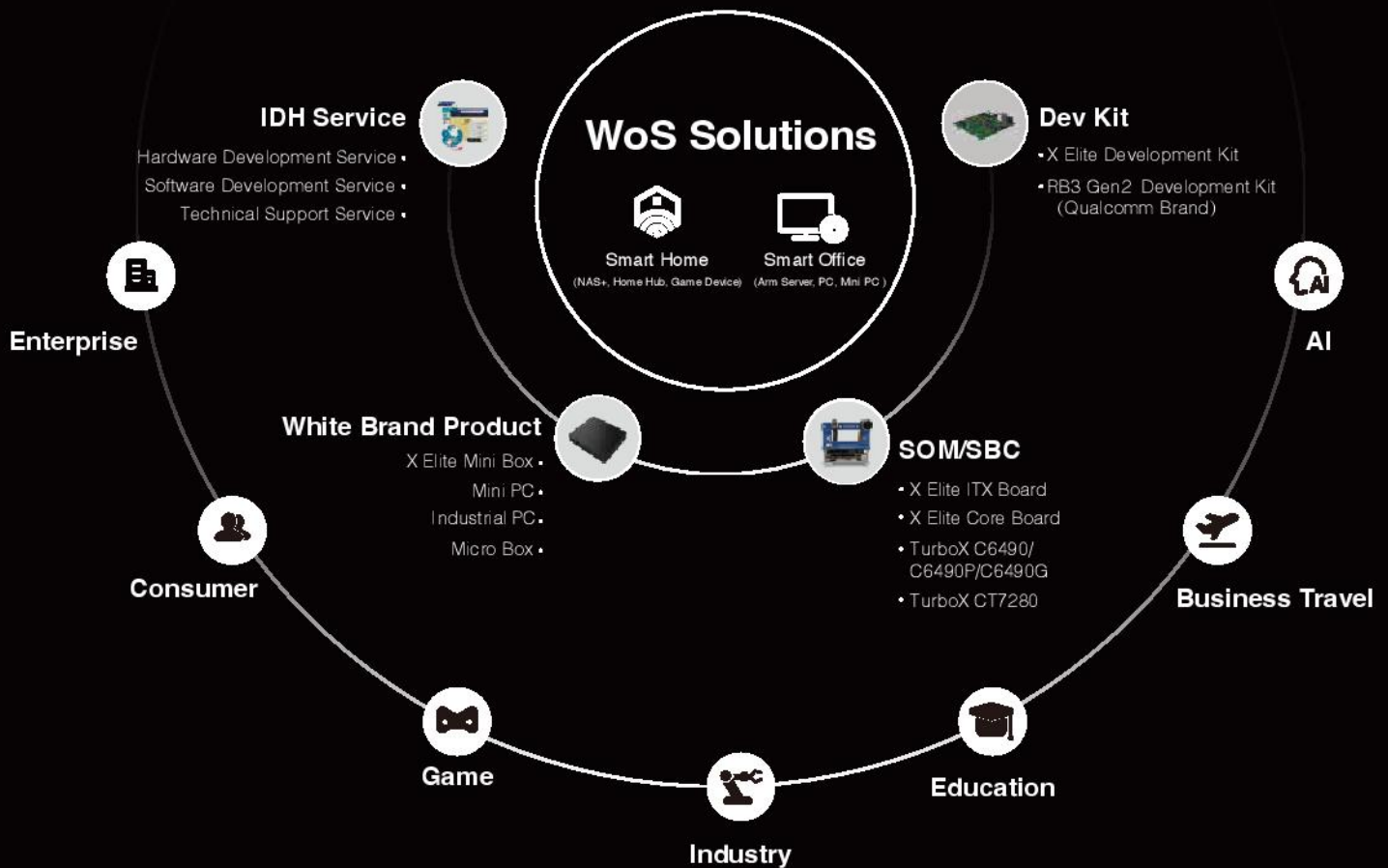| Mini PC	Desktop Computer	Notebook
Industrial Tablet	All-in-One Computer	Other Windows Devices

Thundercomm

WoS Solutions

Smart Home
(NAS+, Home Hub, Game Device)

Smart Office
(Arm Server, PC, Mini PC)

IDH Service
- Hardware Development Service
- Software Development Service
- Technical Support Service

Dev Kit
- X Elite Development Kit
- RB3 Gen2 Development Kit (Qualcomm Brand)

Enterprise

AI

White Brand Product
- X Elite Mini Box
- Mini PC
- Industrial PC
- Micro Box

SOM/SBC
- X Elite ITX Board
- X Elite Core Board
- TurboX C6490/ C6490P/C6490G
- TurboX CT7280

Consumer

Business Travel

Game

Industry

Education

AI Mini PC G1 Elite

Snapdragon
X Elite

- Latest Qualcomm Snapdragon X Elite 12-core SoC, built for AI with up to 45 TOPS
- Rich interfaces including 3x USB4 Type-C, 1x USB Type-A, SD card, Wi-Fi 7/BT 5.4
- Windows 11 Home and Linux support

AI Mini PC G1 IoT

- Based on Qualcomm QCS6490 processor, built for AI with up to 12 TOPS
- Low power consumption, fan and fanless design, completely silent
- Windows 11 IoT and extended product support through 2036

AI Mini PC G1

Snapdragon
X Plus

- Based on Snapdragon X Plus SoC, built for AI with up to 45 TOPS
- Rich interfaces: USB4 Type-C, USB Type-A, HDMI, Wi-Fi 7/Bluetooth 5.4 for functional expansion
- Windows 11 Home support

Contacts:
E-mail: sales@thundercomm.com

RUBIK Avatar AI Interactive Digital Human On-device Computing Suite

RUBIK Avatar AI interactive digital human on-device computing suite is developed based on Thundercomm's on-device AI and RUBIK Avatar digital humans technology. It is designed for software and hardware equipment integrators to create products with AI digital human interaction functions and provides the ability to quickly integrate AI interactive digital humans.

SDK

Software Development Kit

Graphics

Voice

Multi-modal Perception module

AI Box

RUBIK Avatar

Component

AI box
A lightweight and high-computing power AI Box that realizes the real-time interaction with the digital human on the on-device and intelligent functions.

Multi-modal perception module
Includes cameras and microphone arrays to achieve precise recognition of user voices in noisy environments.

Interactive digital human SDK
Provides developers with convenient development interfaces to quickly and easily integrate digital human interaction functions.

Product Value

Help integrators reduce development costs and time, enabling them to quickly integrate AI interactive digital humans and intelligent capabilities into products, enhance product competitiveness, and meet new intelligent interaction requirements.

Application

Medical Industry
Intelligent medical guidance

Enterprise Service Industry
Intelligent brand promotion

Retail and Catering Industry
Intelligent food ordering

Technology

- Thundercomm's on-device AI construction
- Cartoon digital human creation and rendering
- Real-person digital human replication and rendering

- Smooth interaction experience construction
- On-device and edge-side computing hardware development
- On-device intelligent voice construction

Advantage

- One-stop solution for rapid integration of AI interactive digital human capabilities, reducing the development time and costs for integrators.
- Local real-time rendering of digital humans, with perfect synchronization of lip movements and speech, reducing dependence on network bandwidth.
- Multimodal recognition and perception capabilities in complex environments, ensuring a smooth human-computer interaction experience.
- A lightweight and high-computing power AI box that can be flexibly integrated into scenarios and supports various interactive terminal devices.

Contacts:
E-mail: sales@thundercomm.com

Accelerate Digital Transformation with Edge AI

Edge AI Box

EB2
Edge AI Station

Powered by Qualcomm
QCS610 SoC

EB5
Edge AI Station

Powered by Qualcomm
QCS8250/QRB5165 SoC

EB3G2
Edge AI Station

Powered by Qualcomm
QCS6490 SoC

EB5G2
Edge AI Station

Powered by Qualcomm
QCS8550 SoC

· Wide range of computing power selections

· Powerful codec capabilities for multi-channel decoding

· Rich interfaces designed to meet customized requirement

· Fanless structure design supports working in a wide temperature range

· On-shelf product with high reliability, passed multiple product tests and certifications

· 100+ commercially ready algorithms for various applications

· Integrated IoT harbor cloud based device management platform

· Embedded EdgeOS for application management

· With experience in implementing various solutions, and provision of customized services.

Software

EdgeOS
Edge Management Platform

· Support system OTA upgrade, AI analysis config with WebUI

· Support ONVIF/RTSP protocol IPC or NVR access

· Support service scheduling, orchestration and scaling containers

· Support IoT Harbor/AWS IoT Greengrass/Azure IoT cloud services

IoT Harbor
Cloud Management Platform

· Support device, application and algorithm upgrade and management

· Support major IoT and video protocols with fast cloud connection

· Support AI analysis task management and alarm management

· Support RESTful API and public cloud

Algorithm

Phone Call Detection	Smoking Detection	Mask Detection	Face Recognition
Smoke and Flame Detection	Off-duty and Sleep Detection	Safety Helmet Detection	Unauthorized Leave Detection
Fall Detection	Intrusion Detection	People Counting	Passenger Flow Statistics

Application

Smart Retail   Smart Building   Smart Manufacturing   Smart Traffic   Digital Avatar   Smart City

San Diego, USA

5405 Morehouse Drive Suite 210 □San Diego CA 92121

📞 +1-858-352-6181

✉ sales@thundercomm.com

Ulm, Germany

Magirus-Deutz-Str. 13 89077 Ulm

✉ sales@thundercomm.com

Tokyo, Japan

9F Osaki wiz tower Building, 2-11-1 Osaki, Shinagawa-Ku, Tokyo, Japan, 141-0032

✉ sales@thundercomm.com

Seoul, Korea

#401, 4fl, Uspace 2-B, 670, Daewangpangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, 13494 Korea

✉ sales@thundercomm.com

Beijing, China

ThunderSoft Building, Building 3, No.9 Qinghua Dong Road, Haidian District, Beijing, China, 100083

📞 +86-400-006-1696

✉ sales@thundercomm.com

Get the Latest News from Thundercomm

Website   LinkedIn